

REMARKS

In the final Office Action,¹ the Examiner:

- (a) objected to the Amendment filed January 5, 2009, under 35 U.S.C. § 132(a) because it allegedly introduced new matter into the disclosure;
- (b) rejected claims 1-18 under 35 U.S.C. § 101 because the claimed invention is allegedly directed to non-statutory subject matter; and
- (c) rejected claims 1-22 under 35 U.S.C. § 103(a) as being unpatentable over Muratani (U.S. Patent Publication No. 2002/0071593) ("Muratani") in view of Alattar et al. (U.S. Patent Publication No. 2002/0009208) ("Alattar").

Applicants amend independent claims 1, 10, and 19-22 to more clearly define the claimed invention. Support for the claim amendments may be found in Applicants' specification at, for example, line 6 on page 29 - line 25 on page 33. Applicants amend dependent claims 5, 7, and 14 only to improve form. Upon entry of this Amendment, claims 1-22 will remain pending in this application. Applicants respectfully traverse the objection and the rejections for at least the following reasons.

Objection to the Amendment under 35 U.S.C. § 132(a):

The Examiner objected to the Amendment filed January 5, 2009, under 35 U.S.C. § 132(a) because it allegedly introduced new matter into the disclosure. In particular, the Examiner alleged that "[t]he amendment to the specification ... deletes the recitation 'or communication medium' [,and t]his amendment changes the scope of the disclosed invention ... and therefore constitutes new matter" (Office Action, p. 2).

Applicants respectfully traverse the objection. However, to expedite prosecution of this case, Applicants cancel this amendment to the specification.

¹ The Office Action contains statements characterizing the related art and the claims. Regardless of whether any such statements are specifically identified herein, Applicants decline to automatically subscribe to any statements in the Office Action.

Rejection of Claims 1-18 under 35 U.S.C. § 101:

Applicants respectfully traverse the rejection of claims 1-18 under 35 U.S.C. § 101. However, to expedite prosecution of this case, Applicants have amended independent claims 1 and 10 to even more clearly recite statutory subject matter. Support for the claim amendments may be found in Applicants' specification at e.g., Figs. 2 and 4, which show structures of the claimed digital watermark embedding apparatus and digital watermark detection apparatus, respectively. Furthermore, Applicants' specification describes that "when the digital watermark embedding and detection apparatuses are realized by hardware, they can be made as semiconductor apparatuses" (p. 45, lines 18-20).

Therefore, the 35 U.S.C. § 101 rejection of independent claims 1-10 and, hence, dependent claims 2-9 and 11-18 has been overcome and should be withdrawn.

Rejection of Claims 1-22 under 35 U.S.C. § 103(a):

Applicants traverse the rejection of claims 1-22 under 35 U.S.C. § 103(a) as being unpatentable over Muratani in view of Alattar. No *prima facie* case of obviousness has been established for pending claims 1-22.

The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. Such an analysis should be made explicit and cannot be premised upon mere conclusory statements. See *M.P.E.P. § 2142, 8th Ed., Rev. 6 (Sept. 2007)*. "A conclusion of obviousness requires that the reference(s) relied upon be enabling in that it put the public in possession of the claimed invention." *M.P.E.P. § 2145*. Furthermore, "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary

skill in the art” at the time the invention was made. *M.P.E.P. § 2143.01(III)*, *internal citation omitted*. Moreover, “[i]n determining the differences between the prior art and the claims, the question under 35 U.S.C. § 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious.” *M.P.E.P. § 2141.02(I)*, *internal citations omitted* (emphasis in original).

“[T]he framework for objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 U.S.P.Q 459 (1966).... The factual inquiries ... [include determining the scope and content of the prior art and] ... [a]scertaining the differences between the claimed invention and the prior art.” *M.P.E.P. § 2141(II)*. “Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art.” *M.P.E.P. § 2141(III)*.

Here, a *prima facie* case of obviousness has not been established because the Office Action has neither properly determined the scope and content of the prior art nor properly ascertained the differences between the claimed invention and the prior art. Accordingly, the Office Action has failed to clearly articulate a reason why the prior art would have rendered the claimed invention obvious to one of ordinary skill in the art.

Claim 1 calls for a combination including, for example, “[a] digital watermark embedding apparatus ... comprising: ... a function randomization unit ... configured to generate, based on the key information, a randomizing function, map each block of the target content to a target space based on the randomizing function, the target space comprising embedding amounts, and compute a composite function based on the

randomizing function and the topological function,” (emphasis added). Muratani fails to teach or suggest at least this element.

Muratani suggests that when a first topological invariant is transformed into a second topological invariant by randomization, the first topological invariant is embedded (see, e.g., para. [0127] - [0131]). However, Muratani does not teach or suggest at least “map[ping] each block of the target content to a target space based on the randomizing function, the target space comprising embedding amounts,” as recited in claim 1 (emphasis added).

Alattar fails to cure Muratani’s deficiencies. The Examiner alleged that “Alattar teaches a randomizing-function generation unit configured to generate ... a randomizing function by mapping from a first space to a second space ..., the first space and the second space including a target space concerning embedding amounts (page 10, paragraphs 122-128)” (Office Action, p. 10). However, this is not correct.

Alattar discloses “an example of the assignment map” and “[an] orientation pattern [comprising] of a pattern of quad symmetric impulse functions in the spatial frequency domain” (para. [0122] - [0128]). However, the assignment map or the orientation pattern, as taught by Alattar, cannot constitute the “target space” recited in claim 1.

Further, Applicants’ representatives held a telephone interview with the Examiner on June 30, 2009 regarding the 35 U.S.C. § 103 rejection. During the telephone interview, the Examiner asserted that Muratani teaches all the features recited in independent claim 1, except the feature of generating a randomizing function. Moreover, the Examiner appears to agree that Alattar does not teach the claimed “target space.”

Nevertheless, Applicants have amended independent claim 1 to more clearly define the claimed invention. Neither Muratani nor Alattar, nor any combination thereof, teaches “[a] digital watermark embedding apparatus ... comprising: ... a function randomization unit ... configured to generate, based on the key information, a randomizing function, map each block of the target content to a target space based on the randomizing function, the target space comprising embedding amounts, and compute a composite function based on the randomizing function and the topological function,” as recited in claim 1 (emphasis added).

In view of the above, the Office Action has neither properly determined the scope and content of the prior art nor properly ascertained the differences between the claimed invention and the prior art. Moreover, there is no motivation for one of ordinary skill in the art to modify the references to achieve the claimed combinations. Thus, the Office Action does not clearly articulate a reason why the prior art would have rendered the claimed invention obvious to one of ordinary skill in the art. Accordingly, no *prima facie* case of obviousness has been established. Independent claim 1 is allowable, and dependent claims 2-9 are also allowable at least by virtue of their dependence from base claim 1. The 35 U.S.C. § 103(a) rejection of claims 1-9 is therefore improper and should be withdrawn.

Independent claims 19 and 21, although different in scope from claim 1 and from each other, recite elements similar to claim 1 and are thus allowable for at least the reasons discussed above with respect to claim 1. Therefore, the 35 U.S.C. § 103(a) rejection of claims 19 and 21 is also improper and should be withdrawn.

Similarly, with respect to independent claim 10, Muratani does not teach or suggest at least “[a] digital watermark detection apparatus ... comprising: ... a function

ordering unit ... configured to generate, based on the key information, an ordering function, [and] map each block of the acquired target content with embedded digital watermark information to a randomized space comprising embedding amounts," as recited in claim 10 (emphasis added).

Alattar fails to cure Muratani's deficiencies. Alattar discloses "[a] digital watermarking method for authenticating a media object transforms a media signal to a frequency domain comprising an array of frequency coefficients" (Abstract, emphasis added). However, neither Muratani nor Alattar, nor any combination thereof, teaches "[a] digital watermark detection apparatus ... comprising: ... a function ordering unit ... configured to generate, based on the key information, an ordering function, [and] map each block of the acquired target content with embedded digital watermark information to a randomized space comprising embedding amounts," as recited in claim 10 (emphasis added).

In view of the above, the Office Action has neither properly determined the scope and content of the prior art nor properly ascertained the differences between the claimed invention and the prior art. Moreover, there is no motivation for one of ordinary skill in the art to modify the references to achieve the claimed combinations. Thus, the Office Action does not clearly articulate a reason why the prior art would have rendered the claimed invention obvious to one of ordinary skill in the art. Accordingly, no *prima facie* case of obviousness has been established. Independent claim 10 is allowable, and dependent claims 11-18 are also allowable at least by virtue of their dependence from base claim 10. The 35 U.S.C. § 103(a) rejection of claims 10-18 is therefore improper and should be withdrawn.

Independent claims 20 and 22, although different in scope from claim 10 and from each other, recite elements similar to claim 10 and are thus allowable for at least the reasons discussed above with respect to claim 10. Therefore, the 35 U.S.C. § 103(a) rejection of claims 20 and 22 is also improper and should be withdrawn.

Conclusion

In view of the foregoing, Applicants request reconsideration of the application and withdrawal of the rejections. Pending claims 1-22 are in condition for allowance. Accordingly, Applicants request a favorable action.

If there are any remaining issues or misunderstandings, Applicants request the Examiner telephone the undersigned representative to discuss them.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.


Respectfully submitted,

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